

A REVISION OF THE FUR MITES MYOBIIDAE (ACARINA) (*suite*).

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Genus **Calcarmyobia** gen. nov.

MALE. — Dorsal spines broadly foliate ; lateral spines I to III broad at base and tapering to points distally ; sub-median spines I and II with two joints, broadly foliate, distal joint hyaline ; dorsal spines striated longitudinally. Stout spur on anterior edge of fourth segment of leg II. Flanking the capitulum close to base of coxae I is a pair of stout, recurved, cone-shaped sclerotic processes.

Tarsus II with two stout claws ; tarsus III and IV each with two long claws. Capitulum considerably reduced for the family.

FEMALE. — Dorsal spines similar to those of the male ; sub-median spines III and IV two-jointed as in the male ; median spines I and II two-jointed. Coxae I with a stout, cone-shaped spur on the dorsum as in the male, but longer.

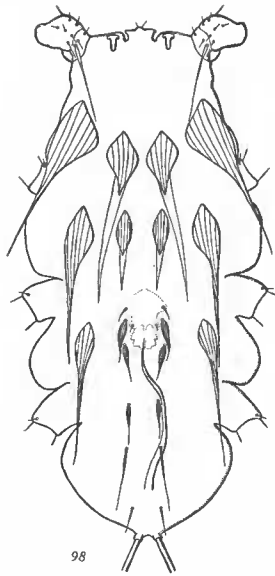
Type species : *Myobia rhinolophia* Radford, 1940.

CALCARMYOBIA RHINOLOPHIA (Radford, 1940).

Myobia rhinolophia Radford, 1940, *Parasitology*, **32** : O, 91.

Myobia miniopteris Womersley, 1941, *Rec. S. Aust. Mus.*, **7** : 52.

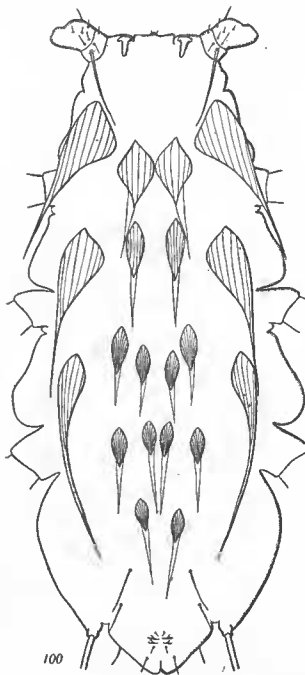
The male dorsum (fig. 98) has the expanded foliate spines. Lateral spines I very broad at base, striated, tapering to points, extending almost to coxae III ; lateral spines II, extending from prosterior edge of coxae II to coxae IV ; lateral spines III extending from posterior edge of coxae III to posterior edge of coxae IV. Sub-median spines I lying between, and posterior to lateral spines I, striated on the basal segment, the long, hyaline segment extending to middle of coxae III ; sub-median spines II lying between, and level with lateral spines II similar to preceding spines, but with shorter hyaline segment ; sub-median spines III and IV flanking the genital pore, striated, but without the hyaline segment ; sub-median spines V level with coxae IV ; sub-median spines VI long, slender ; sub-median spines VII anterior to terminal bristles. The genital pore has a sclerotic scutum and two pairs of spines as figured. At the base of the capitulum close to coxae I is a stout, cone shaped



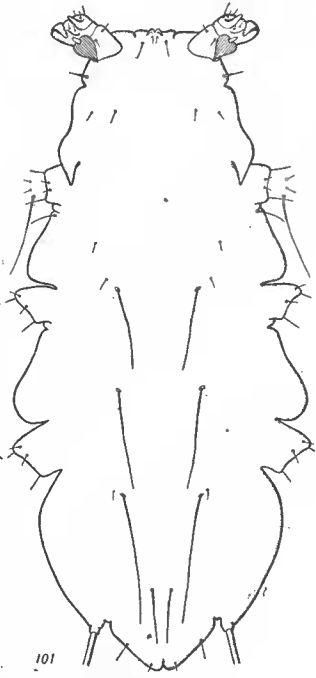
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101

Calcaromyobia rhinolophia (Radford, 1940).

FIG. 98, ♂ dorsum. — FIG. 99, ♂ venter. — FIG. 100, ♀ dorsum. — FIG. 101, ♀ venter.

sclerotic process or spur, directed towards the posterior end of the body. A stout spur is borne on the fourth segment of legs II (fig. 100).

The male venter (fig. 99) has two pairs of spines anterior to coxae II; third pair of spines level with coxae II; posterior to coxae II on the lateral edge of body is a pair of spines; two pairs of small spines anterior to coxae III, flanked medially by a pair of long spines; between coxae III and IV is a pair of long spines; posterior to coxae IV is a pair of long spines and a pair of accessory spines laterally. Anterior to coxae II is a pair of spur-like appendages laterally. Venter of capitulum has two pairs of spines and the palpal claws. On lateral edge of coxae I is a stout spine; tarsus shows the clasping apparatus, and thumb-like spur with striated, foliate process. Tarsus II with two stout, equal claws; tarsus III and IV each with two long claws.

The female dorsum (fig. 101) has the same type of capitulum as in the male — reduced — with stout, cone-shaped process at base of coxae I. Lateral spines I and II almost identical to those of male; lateral spines III longer than in the male. Sub-median spines I midway between coxae I and II, their basal segments striated, second segment hyaline and tapering; sub-median spines II extending from posterior edge of coxae II to posterior edge of coxae III; sub-median spines III below level of coxae III, almost reaching level of coxae IV; sub-median spines IV level with anterior edge of coxae IV, extending some distance beyond coxae IV. Between sub-median spines II and level with lateral spines III are median spines I, extending backwards to median spines II which lie between sub-median spines IV. Median spines III posterior to preceding spines, almost level with distal ends of median spines II. Between median spines III and terminal bristles are sub-median spines V and VI, long, slender, not foliate. Surrounding genital pore are two pairs of stout, curved spurs which are borne upon papillae; also two pairs of spines, one anterior the other posterior to the paired genital claws. A third pair of longer spines between genital pore and posterior end of body; midway between these and terminal bristles is a pair of long spines on lateral edge of body.

The female venter (fig. 102) has palpal claws and two pairs of spines on capitulum; stout spines on lateral edge of coxae I; grasping apparatus of legs I similar to the male. Anterior to coxae II are two pairs of spines; third pair of spines level with anterior edge of coxae II; midway between coxae II and III is a pair of small spines a pair of long spines level with anterior edge of coxae III, flanked laterally by a pair of smaller spines; midway between coxae III and IV is a pair of spines; posterior to coxae IV is a pair of spines which reach the terminal bristles. Two pairs of spines

placed between the anus and terminal bristles. Accessory spines are borne before coxae III and IV. Tarsus II with two stout claws; tarsus III and IV each with two long claws.

Type host : A bat (*Rhinolophus lobatus* Peters).

Type locality : Kapretwa, Mt. Elgon, Kenya. 1939. T. H. E. Jackson.

Measurements : ♀ 0,4 mm × 0,19 mm ; ♀ 0,51 mm × 0,21 mm.

Holotype male and allotype female in British Museum (Nat. Hist.) numbered 1940-2-2-2 and 1940-2-2-3 respectively. Paratypes in the author's private collection. Maratype females in U. S. National Museum and Dr Strandtmann's collection at Galveston, Texas.



Calcaromyobia rhinolophia (Radford, 1940). Leg I of ♀ (dorsum).

Genus **Neomyobia** gen. nov.

Closely similar to those of the genus *Protomyobia* Ewing, 1938 in the possession of a claw on tarsus I; two claws on tarsus II (at least in the female, but not always in the male); differing from *Protomyobia* in having expanded or foliate dorsal spines.

Type species : *Myobia rollinati* Poppe, 1908.

NEOMYOBIA ROLLINATI (Poppe, 1908).

Myobia rollinati Poppe, 1908, in Fahrenholz (1908) *Abh. nat. Ver. Bremen*, **19** : 3, 363.

The male dorsum (fig. 103) has the expanded, foliate, striated lateral spines I anterior to coxae II, tapering to long points, lateral spines II posterior to coxae II, longer but not as broad as preceding

spines ; lateral spines III level with posterior edge of coxae III, narrower than preceding spines, reaching beyond posterior edge of coxae IV. Level with lateral spines I is a pair of very small spines ; five pairs of small spines level with lateral spines II. Sub-median spines broad, lanceolate, striated, level with and between lateral spines III ; sub-median spines II not as broad as preceding spines, posterior to coxae IV ; sub-median spines III, simple long, slender placed between sub-median spines II and terminal bristles.

The male venter (fig. 104) has three pairs of spines on capitulum ; tarsal claws on legs I. Posterior to coxae I is a pair of spines on lateral edge of body ; anterior to coxae II is a pair of spines ; level with coxae II is a pair of spines ; posterior to coxae II is a pair of spines on lateral edge of body ; anterior to coxae III is a pair of long spines ; posterior to coxae III is a pair of long spines ; level with coxae IV is a pair of spines. No accessory spines are at the bases of these ventral spines. Tarsus II with two stout claws ; tarsus III and IV each with two long claws.

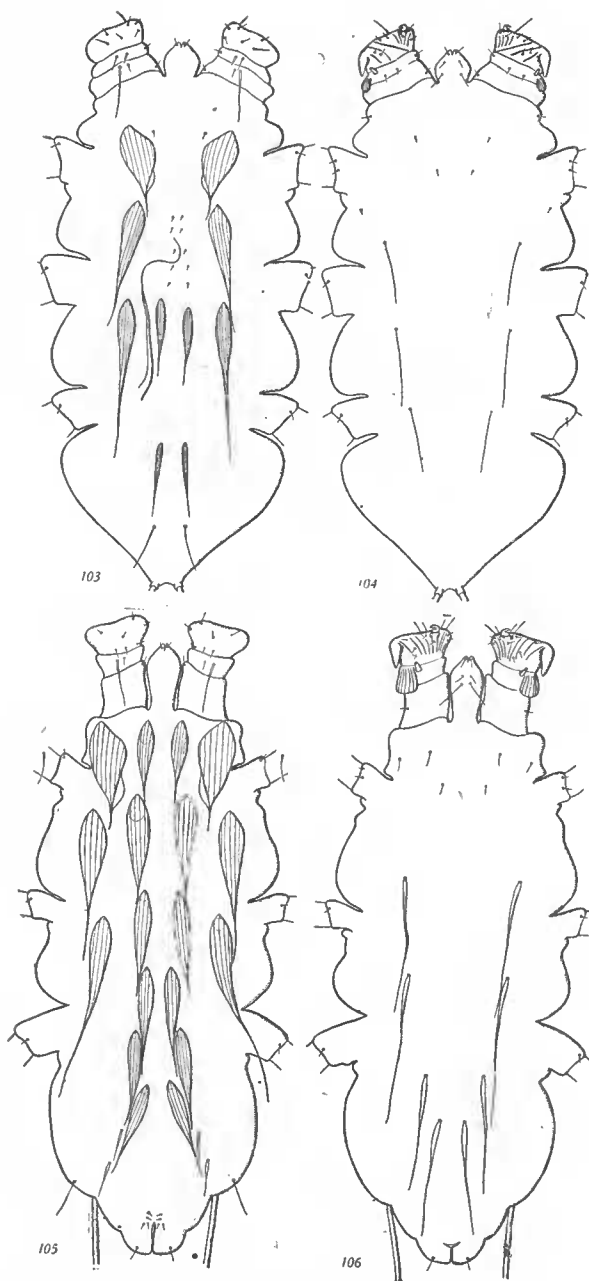
The female dorsum (fig. 105) has lateral spines I similar to those of male, placed close to coxae I ; lateral spines II broadly lanceolate, striated, posterior to coxae II, extending to midway between coxae III and IV ; lateral spines III striated, tapering, posterior to coxae III, reaching well beyond coxae IV. Lateral spines IV long, slender, not expanded or striated, placed on lateral edge of body anterior to terminal bristles. Sub-median spines I level with lateral spines I, broad, foliate, striated ; sub-median spines II broader than preceding spines, posterior to coxae II ; sub-median spines III level with coxae III, extending to level of coxae IV ; sub-median spines IV anterior to coxae IV ; sub-median spines V level with coxae IV ; sub-median spines VI posterior to coxae IV. Between this pair of spines and the terminal bristles are two pairs of slender spines. Four pairs of small spines surround the genital pore. Flanking the anus is a pair of slender spines, close to lateral edge of body.

The female venter (fig. 106) has three pairs of spines on capitulum ; tarsal claw on leg I. Anterior to coxae II are two pairs of spines ; a pair of spines level with coxae II ; anterior to coxae III is a pair of long spines extending to coxae IV ; midway between coxae III and IV is a pair of long spines ; posterior to coxae IV is a pair of long spines reaching almost to level of terminal bristles ; posterior to and between these is a pair of spines. Flanking the anus is a pair of small spines on posterior edge of body. Tarsus II with two stout claws ; tarsus III and IV each with two long claws.

Type host : Greater horse-shoe bat (*Rhinolophus ferrum equinum* Schreber).

Type locality : ? Found on type host throughout its range.

Measurements : ♂ 0.43 mm × 0.16 mm ; ♀ 0.57 mm. × 0.22 mm



Neomyobia rollinatti (Poppe, 1908).

FIG. 103, ♂ dorsum. — FIG. 104, ♂ venter. — FIG. 105, ♀ dorsum. — FIG. 106, ♀, venter.

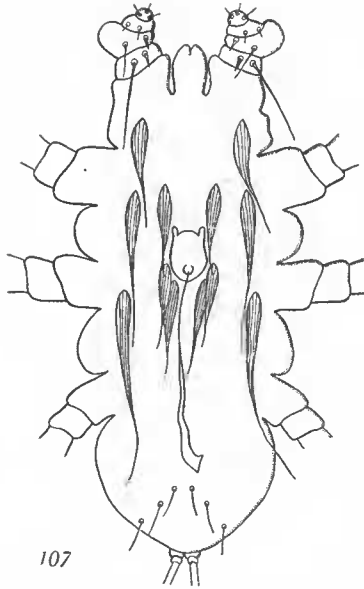
NEOMYOBIA PANTOPUS (Poppe et Trouessart, 1895).

Myobia pantopus Poppe et Trouessart, 1895, *Bull. Soc. ent. France*, 8: 84.

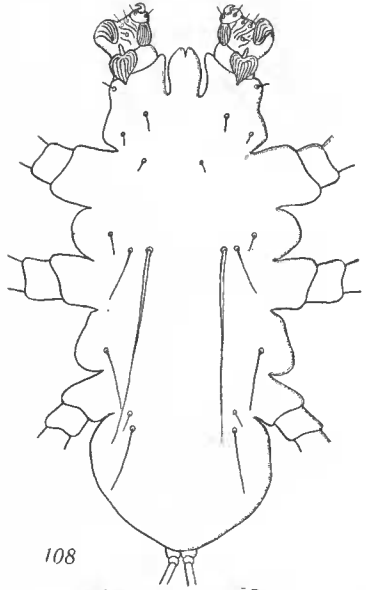
The male dorsum (fig. 107) has lateral spines I anterior to coxae II, broadly expanded at base and with long slender, tapering points, almost reaching coxae III; lateral spines II between coxae II, longer than preceding spines, reaching almost to coxae IV; lateral spines III level with coxae III, longer than preceding spines, almost twice the length of spines I, extending to posterior group of six spines. Submedian spines I level with middle of coxae II, lanceolate at base, not as long as lateral spines I; submedian spines II level with anterior edge of coxae III; median spines I level with coxae III. Anterior to terminal bristles are three pairs of slender, simple spines arranged in two diverging rows. Genital pore borne on a scutum between submedian spines I and II. Penis extending from below level of coxae IV, reaching forwards to the genital pore.

The male venter (fig. 108) has terminal claw on tarsus I, which is characteristic of the genus. Three pairs of small spines anterior to coxae II; a fourth pair of spines level with coxae II; anterior to coxae III is a pair of spines, long, stout, extending beyond coxae IV; flanking these are two pairs of spines; a pair of long, slender spines midway between coxae III and IV; posterior to coxae IV is a pair of long, slender spines, flanked laterally by a pair of shorter spines. Tarsus II, III and IV with two claws, those on tarsus II being the shortest.

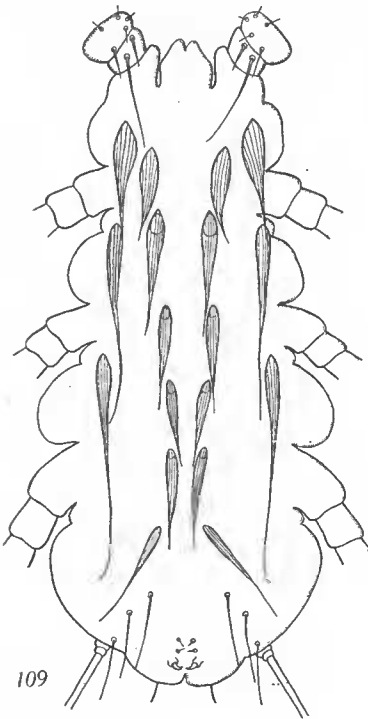
The female dorsum (fig. 109) has lateral spines I well forward anterior to coxae II, extending to coxae II, broadly foliate at base, striated longitudinally; lateral spines II close to posterior edge of coxae II, expanded at base, more slender than preceding spines, reaching almost to coxae IV; lateral spines III close to posterior edge of coxae III, longer than preceding spines, almost reaching the group of six spines, before the posterior end of body. Submedian spines I broadly foliate, anterior to coxae II, striated longitudinally; submedian spines II level with posterior edge of coxae II, broadly foliate at base, tapering to long, slender points at level of coxae III; submedian spines III level with anterior edge of coxae III, extending to midway between coxae III and IV; submedian spines IV posterior to coxae III, reaching middle of coxae IV; submedian spines V level with anterior edge of coxae IV, extending to coxae IV; submedian spines VI posterior to coxae IV, long, tapering, stout at base. Two diverging rows, each of three slender, simple spines lie anterior to terminal bristles. Genital pore with two pairs of short, simple spines lying anterior to the paired genital claws. On posterior end of body is a pair of spines flanking the anus.



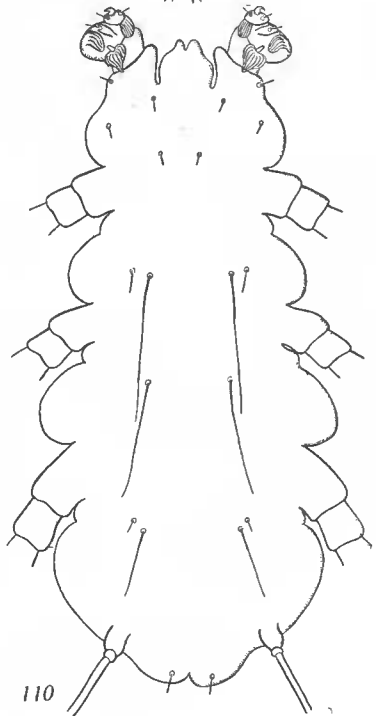
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110

Neomyobia pantopus (Poppe et Trouessart, 1895).

FIG. 107, ♂ dorsum. — FIG. 108, ♂ venter. — FIG. 109, ♀ dorsum. — FIG. 110, ♀ venter.

The female venter (fig. 110) has terminal elaws on tarsus I; four pairs of short, simple spines anterior to coxae II; a pair of long, slender spines between coxae II and III, flanked laterally by a pair of shorter spines; a pair of long, slender spines between coxae III and IV; posterior to coxae IV are two pairs of slender spines, the outer pair being the shorter; on posterior end of body is a pair of spines. Tarsus II, III and IV each with a pair of elaws.

Type host : Barbastelle bat (*Barbastella barbastellus* Schreber).

Type locality : Gallia.

Measurement : 0.35 mm \times 0.20 mm. Sex not stated.

Specimens in the British Museum (Nat. Hist) Nos. ♂ 1948-6-29-3 and ♀ 1948-6-29-4 from which the description and figures were made, give the following measurements :

♂ 0.38 mm \times 0.15 mm. ♀ 0.49 mm \times 0.2 mm.

These mites were taken from a spirit specimen of the type host *Barbastella barbastellus* Schreber collected at Peaslake, Surrey on May 28, 1944 by Mr R. W. Hayman.

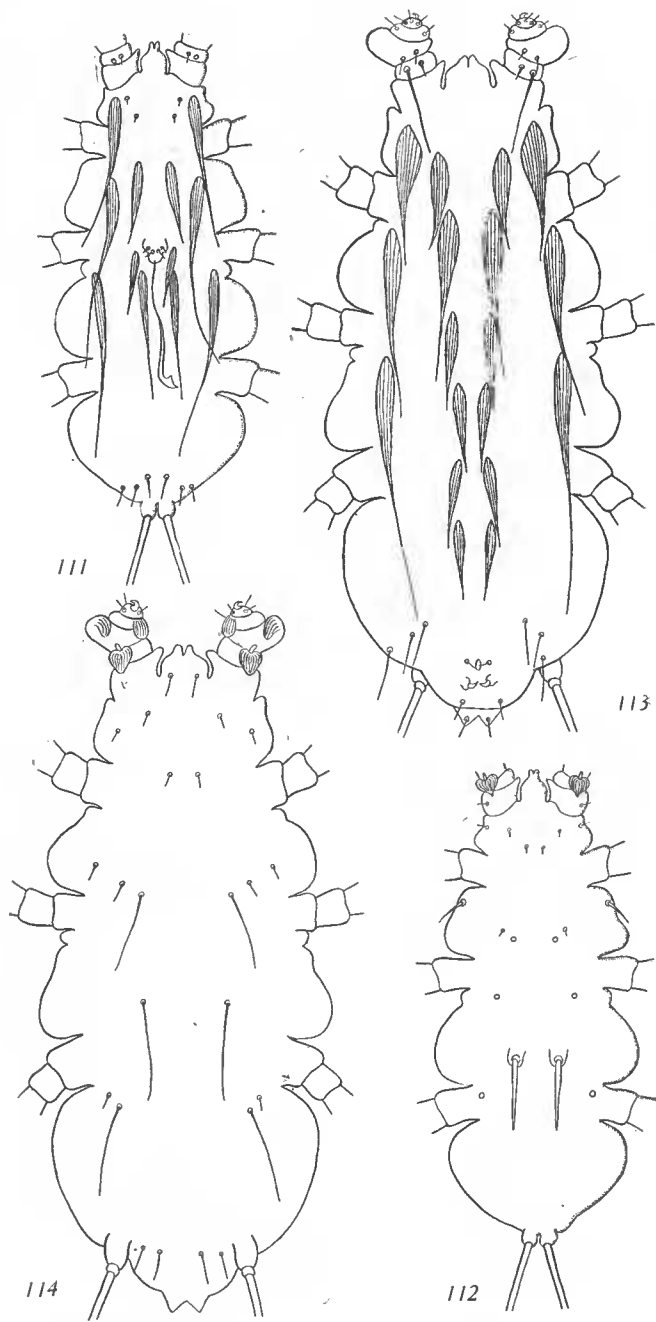
NEOMYOBIA POPPEI (Trouessart, 1895).

Myobia poppei Trouessart, 1895, *Bull. Soc. ent. France*, 8 : 84.

The male dorsum (fig. III) has lateral spines I broadly expanded at base, with long, slender tips, close to coxae I, extending to middle of coxae III; lateral spines II sub-similar, though longer, posterior to coxae II, extending to coxae IV; lateral spines III more slender than preceding spines, posterior to coxae III; two pairs of small spines are borne close to lateral spines I. Sub-median spines I broadly expanded, lying anterior to lateral spines II; sub-median spines II level with coxae III, broadly expanded, short; sub-median spines III broad at base, the length of lateral spines I, level with lateral spines III. Penis long, sinuous, with slender tip, extending forwards from coxae IV to coxae III. Genital pore level with coxae III, furnished with two pairs of short, simple spines. Anterior to terminal bristles is a transverse line of six spines.

The male venter (fig. 112) has three pairs of short spines anterior to coxae II; posterior to coxae II is a pair of long, stout spines on lateral edge of body; anterior to coxae III is a pair of short spines and what appears to be the bases of two other spines; posterior to coxae III there should be a pair of long spines, which, in this specimen have been broken off. The most unusual feature of this species is the pair of very stout, long spines which lie between coxae III and IV. Level with coxae IV are the bases of a pair of spines. Tarsus II, III and IV each bears a stout claw.

The female dorsum (fig. 113) has all lateral and sub-median spines



Neomyobia poppei (Trouessart, 1895).

FIG. 111, ♂ dorsum. — FIG. 112, ♂ venter. — FIG. 113, ♀ dorsum. — FIG. 114, ♀ venter.

foliate at base, tapering, striated longitudinally. Lateral spines I midway between coxae I and II, reaching to midway between coxae I and III; lateral spines II close to posterior edge of coxae II, reaching almost to coxae IV, broad at base; lateral spines III close to coxae III, longer and more slender than preceding spines, almost reaching the group of six spines which flank the genital pore. Sub-median spines I anterior to coxae II, broadly foliate, tapering, reaching midway between coxae II and III; sub-median spines II level with coxae II, foliate, extending to sub-median spines IV; sub-median spines III level with anterior edge of coxae III, shorter than preceding spines; sub-median spines IV midway between coxae III and IV; sub-median spines V level with anterior edge of coxae IV; sub-median spines VI posterior to coxae IV. Two diverging rows, each of three long, simple spines placed before terminal bristles. Genital pore flanked by a pair of short, simple spines; paired genital claws posterior to pore. Two pairs of spines on posterior edge of body.

The female venter (fig. 114) has typical claw on tarsus I; three pairs of short, simple spines anterior to coxae II; level with coxae II is a pair of spines; anterior to coxae III are three pairs of spines, the inner pair being the longest; a pair of long spines between coxae III and IV; posterior to coxae IV is a pair of long spines, flanked laterally by a pair of smaller spines; between terminal bristles are two pairs of spines. Tarsus II, III and IV each terminated by a pair of claws, those on tarsus II being the shortest.

Type host: Pipistrelle bat (*Pipistrellus nathusii* Keys & Blasius).

Type locality: Marseilles, France.

Measurements: ♀ 0.46 mm × 0.18 mm. British Museum specimens.

Remarks. — The description and figures of the male are from the slide (No. 362) in the Fahrenholz collection, Celle Museum, Germany. The female (No. 2793) was not in a condition suitable to make a presentable drawing. For this reason the description and figures were made from the specimen in the British Museum (Nat. Hist.) No. 1948-6-29-5 taken from a spirit specimen of the type host *Pipistrellus nathusii* Keys & Blasius at Palics, Bacsar Co. Hungary presented by the Budapest Museum.